

SCOPE TRACKING - ADDITIONAL WORK (TAW) - 16221

SDD108A; 4Q2011 4 CRUDE MAJOR-EASTSIDE

Scope Creep Type

- ☐ Late (Deliverables supplied late)
☐ Cancel (cancel existing job after WL Frz)
☐ TAW Pre-ER Discovery
☐ Scope Reduction Pre-ER
☐ Scope Addition Pre-ER

- ☒ TAW Post-ER Discovery
☐ Scope Reduction Post-ER
☐ Scope Addition Post-ER
☐ Work Deferral
☐ Other (work done outside of TA)

Approval Status

- ☐ NEW
☐ ESTIMATING
☐ UNDECIDED
☒ APPROVED
☐ DENY

Date: 10/26/2011 WO Nbr: 343627 - 02

Originator: Prasad, Praneil (ppds) RI

T/A Interval (Mos):

ER Submission Date:

Remarks: Approved - MRG 10/27/11

System No:

Equip / Loc: (D) #4 SC Piping

Engineering Required

- ☒ Yes ☐ No

Environmental Review

- ☐ Yes ☒ No

Risk Assessment?

- ☐ Yes ☒ No

Description of work: (Include Options)

(-- BE-148-E1 / 4 Crude / 4 Sidecut Piping: Weld studs to the #4 Sidecut piping to allow for the installation of high temperature corrosion probes on the run. The qualified welder and studs are currently onsite.

10 probe locations, 20 stud welds.

DED INSTRUCTIONS:
SEE ATTACHED WORK INSTRUCTIONS

Justification for this TAW

Performing this work during the shutdown event will eliminate a hot tap, with certain piping areas being below preferred hot tap pipe thicknesses. The probes will allow for the acquisition of high temperature UT data to determine a corrosion rate on the run. The data will help determine the scope for future piping replacements on the #4 sidecut piping. Historically, it has been difficult to obtain pipe thickness data on the run.

Reason work was identified after work list freeze or late:

Work List Freeze Date:

Schedule Status (for use by schedulers):

Current Estimates:

Labor \$0
 Material \$0
 Equip. \$0
 Total: \$0

Summary Info:

ER Contingency: \$0
 TAW Estimates at ER Creation: \$1,549,373
 Current TAW Estimate: \$0
 TAW \$ Approved to Date: \$1,615,551
 Remaining Contingency: (\$1,615,551)

Effect on Schedule

- ☒ None
☐ Risk, Miss Planning Milestone
☐ Risk, number of non-critical path jobs
☐ Potential critical path
☐ New critical path
☐ Extends Schedule by 0

Planning Notes:

Impacts Budget?

- ☐ Yes ☒ No ☒ Capital ☐ Expense

10/28/2011 8:10:04 AM

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SDD108A; 4Q2011 4 CRUDE MAJOR-EASTSIDE

Approvals: Select Added Work Classification and Type To Show Required Approvals...

	Req?	Core Team Members:	Status	Date	NOT SUBMITTED
Operations:	Y	CRUZ, ALFRED (acrz) RI		10/28/11	<i>[Signature]</i>
Technical:	Y	MURPHY, PAT (pmgr) RI		10/27/11	<i>[Signature]</i>
Inspection:	Y	BEAUREGARD, JOHN (tbea) RI		10/28/11	<i>[Signature]</i>
Maint. Core Team Lead:	Y	MASSARO, VINCENT (vrma) RI		10/28/11	<i>[Signature]</i>
Management Approvals:					
Impact Team Leader:	Y	GREENFIELD, MATTHEW (mgcv) RI		10/28/11	<i>[Signature]</i>
TA Superintendent:	N				
Section Head:	N				
Area Business Mgr:	N				
Mgr Of Operations:	N				

Approval Process Comments

CommentDate	Comment	UserEntered
10/27/2011 3:43:39 PM	EWO ATTACHED AND GIVEN TO IMPACT	MURPHY, PAT (pmgr) RI

Entered By: **PPDS** 10/26/2011 2:24:00 PM Last Updated By: **PMGR** 10/27/2011 4:12:07 PM

R. RAMIREZ

OCT 28 2011

10/27/2011 4:12:16 PM

1.0 SCOPE

Current methods for obtaining thickness data on the C-1100 4 S/C piping is virtually non-existent and proved to be insufficient for scoping potential work during the 4CU Major 4Q2011. During the 4Q2011 4CU Major, it was found that approx. 250 lineal feet of piping would require replacement as a result of thinning of the piping, this thinning could not be observed on the run due to the piping being too hot for inspections and the data that is obtained on the run is not accurate due to the elevated temperatures.

In order to better predict what the corrosion rate and what type of repairs should be implemented in 2016 4CU Major, the team elected to install studs on the 4S/C piping. These studs will be used to install wireless corrosion monitoring sensors (ultrasonic wall thickness measurement devices) that can operate in extreme high temperatures and collect accurate and frequent wall thickness readings.

The purpose of this EWO is to detail the work required to install only the studs for these sensors on the piping. This EWO does not include the installation of the wireless monitoring devices.

2.0 MATERIAL

- Obtain studs from Materials Engineering (Praneil Prasad x2649)
- All other materials to be supplied by Maintenance and/or the Piping Contractor.
 - **Maximo Work Order #: 343626-002**

3.0 QUALITY CONTROL REQUIREMENTS

All work in this EWO shall be in strict compliance with the following Richmond Refinery standards:

- All welding in this EWO shall be in compliance with the "Richmond Refinery Metals Craft Manual". The Contractor is responsible for complying with these quality assurance procedures.
- Any repair alternatives to the instructions in this EWO shall be reviewed and approved by a Chevron Engineer.

4.0 WORK INSTRUCTIONS

- Refer to **ISO 0955-007-007/095-007-001**, for stud location information.
- Inspections and Reliability Engineer to field mark the location for new studs.
- Insulation will need to be removed in certain areas. The insulation needs to be removed in an 18"x 18" square in marked locations.
- Engineering to mark general area where studs are to be welded. Inspection to UT gage within 3" of each marked side where studs re to be welded.
- Welding contractor to ensure welding surface is free of any scale or debris. Use wire wheel or other approved buffing method for surface cleaning.
- Welding contractor to mark the location of two (2) stud welds for each sensor 2 ¾" apart (see attached sketch SK-1) on the cleaned surface.

Note: Materials engineering to review and approve stud location

- Welding contractor to verify the studs are 5/16" fully threaded 316L stainless steel.

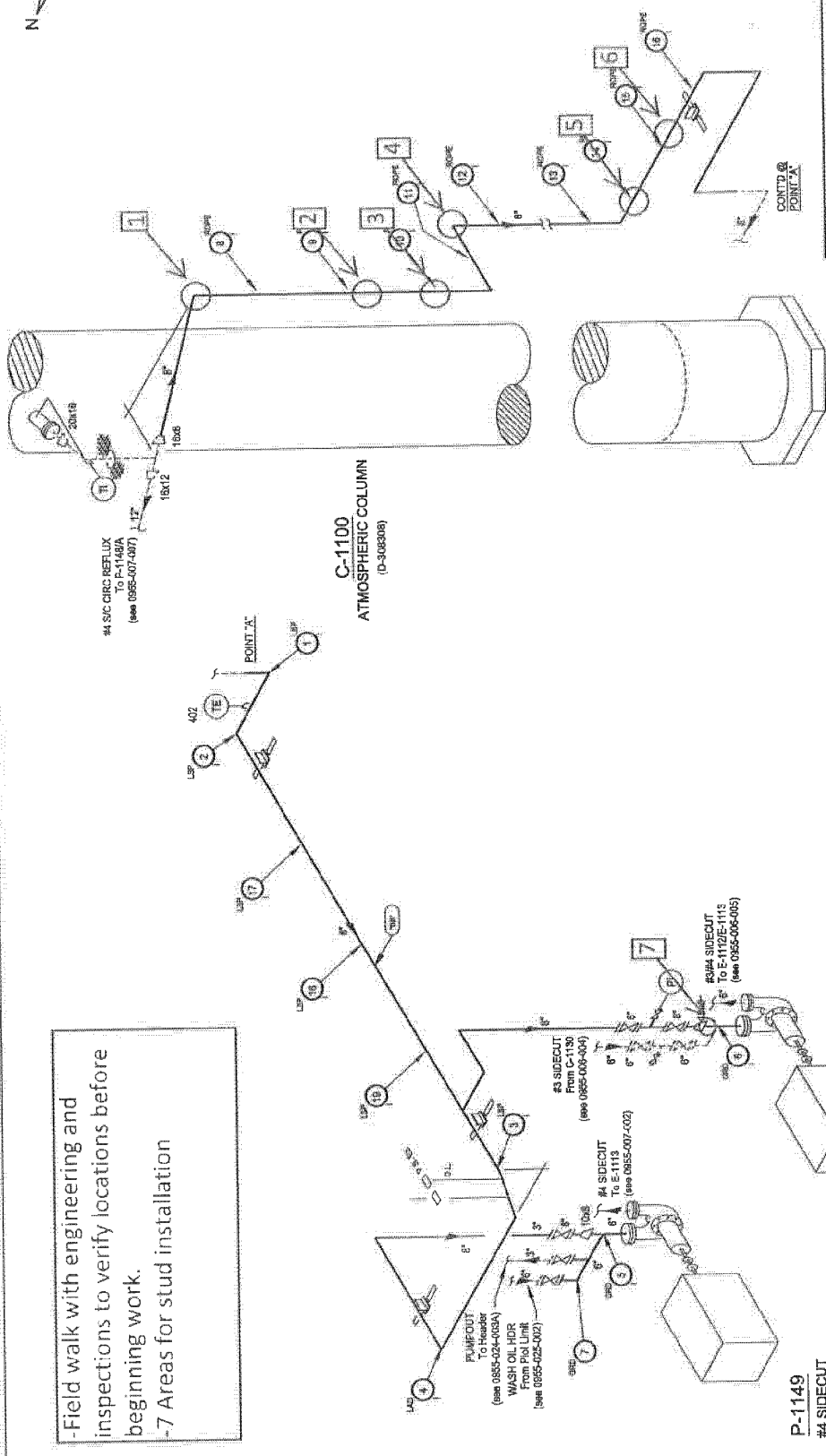
- Weld studs at the location specified using WPS-67 (TIG Only) or Chevron Approved Contractor Equivalent.
- Once studs have been attached, no hydrotest is required as this is not a pressure containing weld. PT root pass on 5% of the welds.
- After work has been completed, leave area un-insulated so corrosion probes can be installed at a later time.

5.0 ATTACHMENTS

	<u>Dwg No</u>	<u>Sheets</u>
• <u>Welding Procedures</u>	WPS-67	See Maintenance Personnel
• <u>P&ID</u>	D308308-21 REV1, D-308309-21 REV1	2
• <u>Drawing</u>	0955-007-007 , 095-007-001	2
• <u>Sketch</u>	Sk-1	1

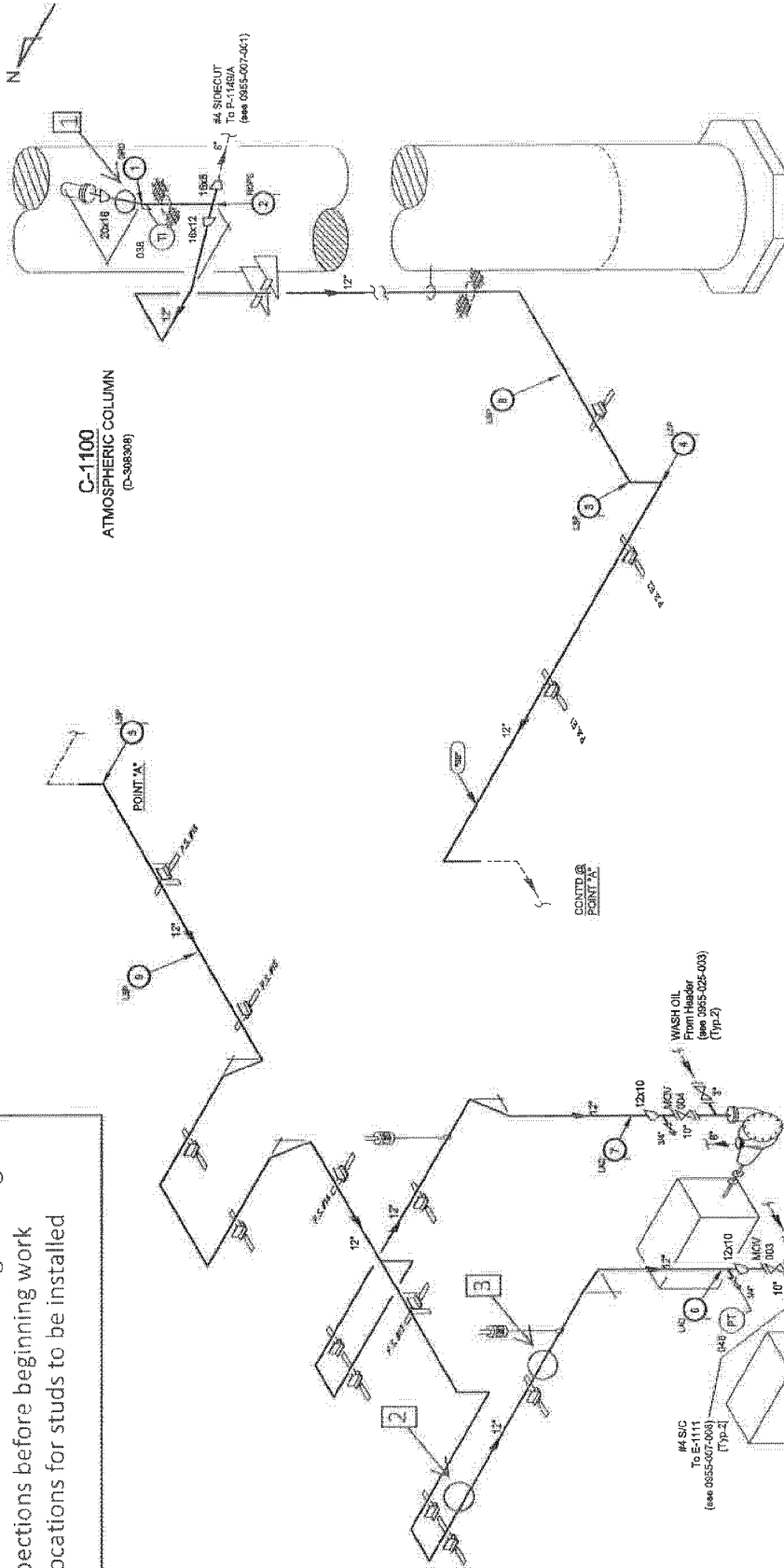


-Field walk with engineering and inspections to verify locations before beginning work.
-7 Areas for stud installation



#4 SIDECUT	
STATUS: (S) SUTD COMPLETE	
MATERIAL: C.S.	SERVICE: #4 S/C (LT GASOL)
PIPE CLASS: 20-2 (100)	INSULATED: <input checked="" type="checkbox"/> CLASS III
LINE NAME: #4 SIDECUT	TO: P-1149A
FROM: C-1100	
INSPECTION PIPING ISOMETRIC	
#7 NO. 2 SIDECUT	
#4 CRUISE UNIT (PLANT 11)	
DISTILLATION AND REFORMING AREA BUSINESS UNIT	
REV: 1	2

-Field walk all location with engineering and inspections before beginning work
 -3 locations for studs to be installed



#4 SIDE CUT CIRC. REFLUX

THIS IS A HOT CIRCUIT.
 GAGE ON SHUTDOWN ONLY.

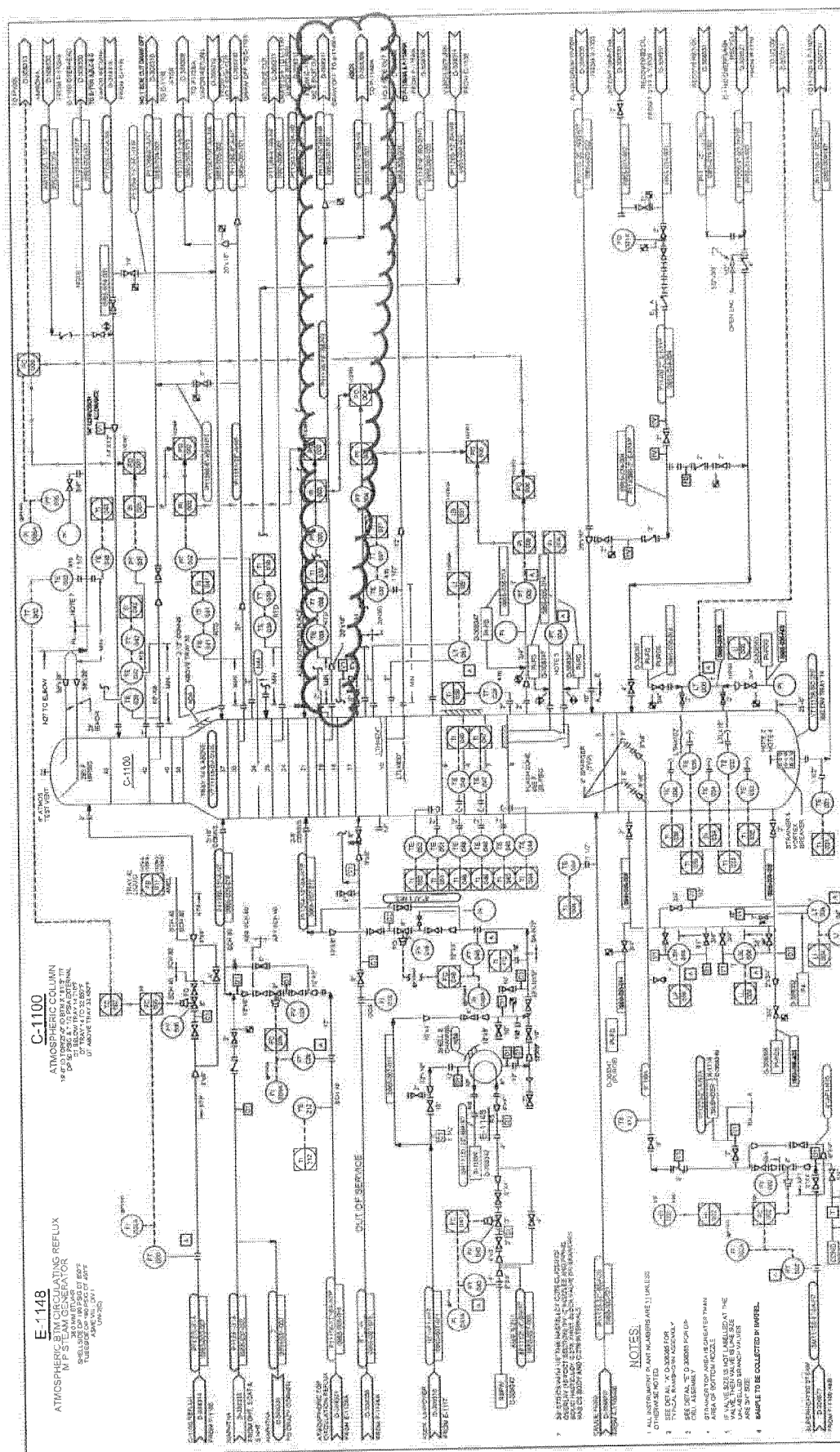
STATUS: SCOTO COMPLETE	RATING7	API-570
MATERIAL: #4 S/C (LT GASOL)	SERVICE: 1600	CLASS I
PIPE CLASS: 7472 (B)	STN TRACED?	CLASS II
LINE NAME: #4 SIDE CUT CIRC. REFLUX	INSULATED?	CLASS III
FROM: C-1100		
TO: P-1148/A		

INSPECTION PIPING ISOMETRIC
 #7 NO. 4 SIDE CUT
 #4 ORIDE UNIT (PLANT 11)
 DISTILLATION AND REFORMING AREA BUSINESS UNIT

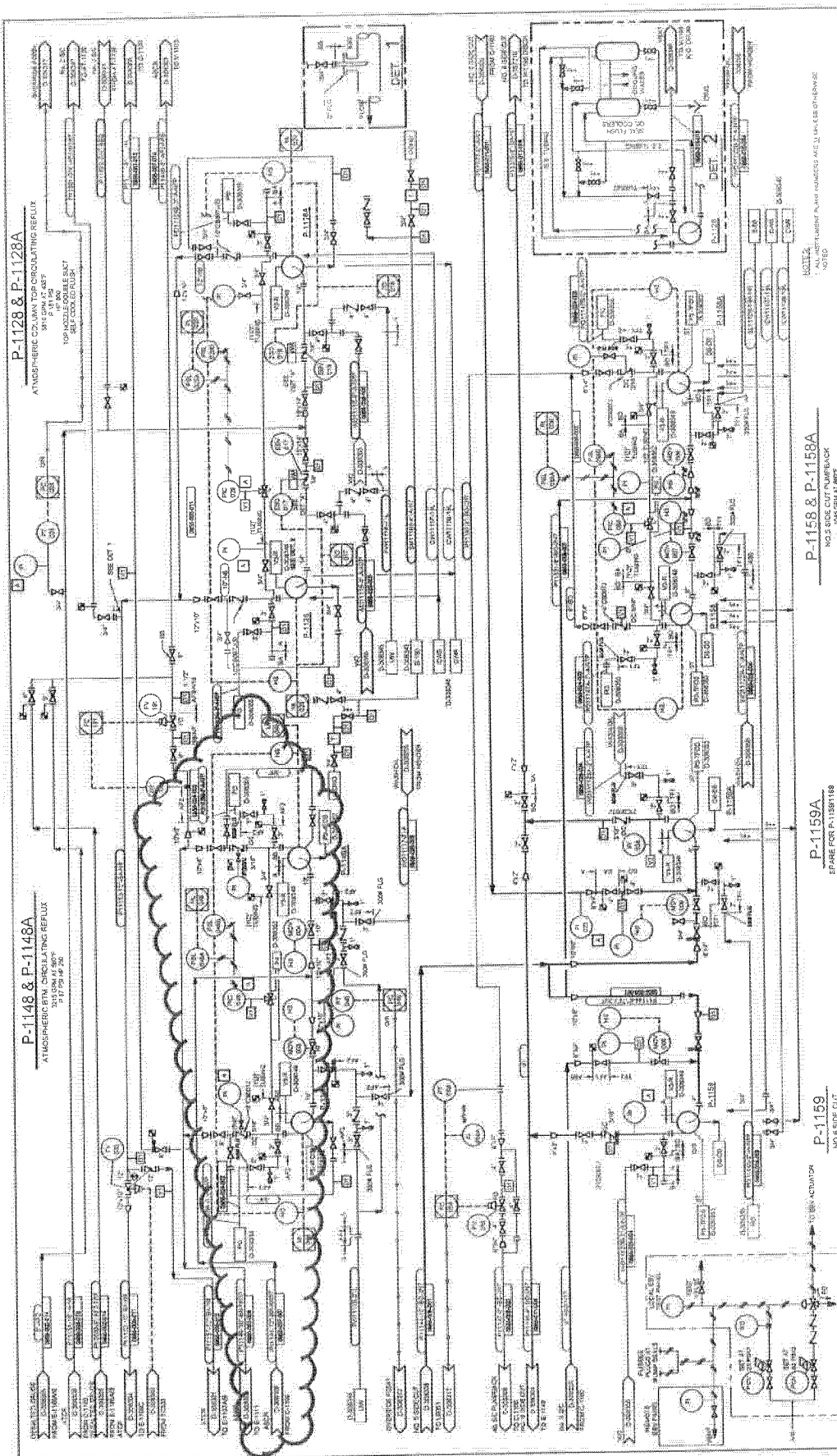
10/12/2011
 Z 0955-007-007

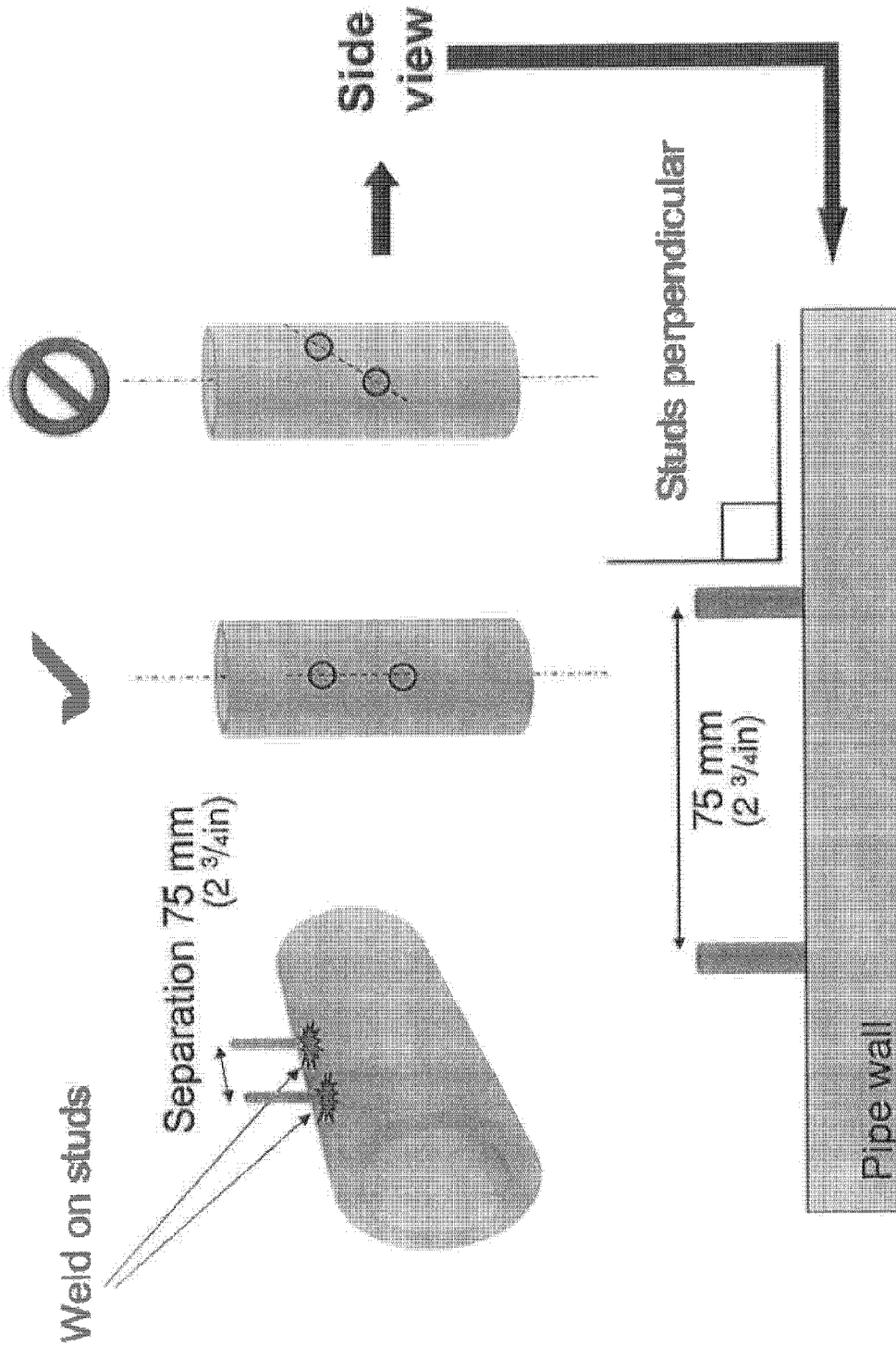
REV 1
 2 1

Work location

[illegible]

Work Location

[illegible]



SK-1: Stud Location/Alignment